

Listing of Claims

1-58. (Canceled).

59. (Currently Amended) An isolated human postnatal deciduous dental pulp multipotent stem cell, wherein the stem cell differentiates into a neural cell, an adipocyte, or an odontoblast, and wherein the stem cells expresses CD146.

60. (Currently Amended) The stem cell of claim 59, wherein the human postnatal deciduous dental pulp multipotent stem cell is obtained from a postnatal deciduous tooth ~~can differentiate into a neural cell, an adipocyte, or an odontoblast.~~

61. (Currently Amended) The human postnatal deciduous dental pulp multipotent stem cell of claim 59, wherein the human postnatal deciduous dental pulp multipotent stem cell ~~can express~~ STRO-1, CD146, ALP, matrix extracellular phosphoglycoprotein ~~LF155~~, basic fibroblast growth factor, endostatin, or any combination thereof.

62. (Currently Amended) The human postnatal deciduous dental pulp multipotent stem cell of claim 59, wherein the human postnatal deciduous dental pulp multipotent stem cell ~~can express~~ CBFA1, ALP, MEPE, BSP, DSPP, or any combination thereof following mineralizing induction.

63. (Currently Amended) The human postnatal deciduous dental pulp multipotent stem cell of claim 59, wherein the human postnatal deciduous dental pulp multipotent stem cell ~~can express~~ CBFA1, Osterix, Osteocalcin, or any combination thereof following induction with BMP-4.

64. (Currently Amended) The human postnatal deciduous dental pulp multipotent stem cell of claim 59, wherein the human postnatal deciduous dental pulp multipotent stem cell ~~can express~~ nestin, β III tubulin, glutamic acid decarboxylase, neuronal nuclei, glial fibrillary acidic protein, neurofilament M, 2',3'-cyclic nucleotide-3'-phosphodiesterase, or any combination thereof following neural induction.

65. (Currently Amended) [[A]] The human postnatal deciduous dental pulp multipotent stem cell of claim 59, wherein the human postnatal deciduous dental pulp multipotent cell is transfected with a nucleic acid segment.

66. (Canceled).

67. (Currently Amended) A method to generate bone in an organism, comprising implanting at least one human postnatal deciduous dental pulp multipotent stem cell of claim 1 ~~human postnatal deciduous dental pulp multi-potent stem cell~~ into the organism, thereby generating bone in the organism.

68. (Currently Amended) The method of claim 67, wherein the human postnatal deciduous dental pulp multipotent stem cell is implanted after mineralizing induction or induction with BMP-4.

69. (Canceled).

70. (Canceled).

71. (Currently Amended) The method of claim 67, wherein the human postnatal deciduous dental pulp multipotent stem cell is implanted to reduce or ameliorate trauma within the organism.

72. (Previously Presented) The method of claim 71, wherein the trauma is a bone degenerative disease or a physical injury.

73. (Previously Presented) The method of claim 72, wherein the bone degenerative disease is osteoporosis.

74. (Previously Presented) The method of claim 72, wherein the physical injury is due to joint replacement, hip replacement, or root canal.

75. (Currently Amended) The method of claim 67, wherein the human postnatal deciduous dental pulp multipotent stem cell has been expanded ex vivo.

76. (Currently Amended) The method of claim 67, wherein the human postnatal deciduous dental pulp multipotent stem cell is implanted in combination with a carrier.

77. (Previously Presented) The method according to claim 76, wherein the carrier comprises hydroxyapatite, tricalcium phosphate, or hydroxyapatite and tricalcium phosphate.

78. (Previously Presented) A method to produce human neural tissue comprising implanting at least one human postnatal deciduous dental pulp multipotent stem cell of claim 1 in a subject, thereby producing neural tissue.

79. (Canceled).

80. (Currently Amended) The method of claim 78, wherein the ~~dental~~ human postnatal deciduous dental pulp multipotent stem cell is implanted following neural induction.

81. (Currently Amended) The method of claim 78, wherein the ~~dental~~ human postnatal deciduous dental pulp multipotent stem cell is implanted into neural tissue contained within the organism.

82. (Currently Amended) The method of claim 78, wherein the ~~dental~~ human postnatal deciduous dental pulp multipotent stem cell is implanted to reduce or ameliorate neural trauma within the organism.

83. (Previously Presented) The method of claim 82, wherein the neural trauma is a neural degenerative disease or a physical injury.

84. (Previously Presented) The method of claim 83, wherein the neural degenerative disease is Alzheimer's disease or Parkinson's disease.

85. (Currently Amended) The method of claim 78, wherein the ~~dental~~ human postnatal deciduous dental pulp multipotent stem cell is expanded ex vivo.

86. (Previously Presented) A method to produce human adipose tissue, comprising implanting at least one ~~dental~~ human postnatal deciduous dental pulp multipotent stem cell of claim 1 into an organism, thereby producing human adipose tissue.

87. (Canceled).

88. (Currently Amended) The method of claim 86, wherein the ~~dental~~ human postnatal deciduous dental pulp multipotent stem cell is implanted following adipocyte induction.

89. (Currently Amended) A method to generate dentin, comprising implanting ~~[[a]]~~ the human postnatal deciduous dental pulp multipotent stem cell of claim 1 into an organism, thereby generating dentin.

90. (Currently Amended) A method to generate dentin comprising
a. contacting pre-existing dentin with a ~~dental~~ the human postnatal deciduous dental pulp multipotent stem cell of claim 1, and
b. incubating the pre-existing dentin and the dental stem cell to produce treated dentin.

91. (Canceled).

92. (Currently Amended) The method of claim 90, wherein the pre-existing dentin is contacted with the dental stem cell ~~in vivo or~~ in vitro.

93. (Previously Presented) The method of claim 90, wherein the pre-existing dentin is contained within a tooth.

94. (Currently Amended) The method of claim 90, further comprising washing the ~~treated~~ dentin with a fluid.

95. (Previously Presented) The method of claim 91, ~~wherein~~ the fluid is water, a biological solvent, or a biological buffer.

96. (Currently Amended) The method of claim 90, wherein further comprising washing the pre-existing dentin with an acid solution or a base solution.

97. (Previously Presented) The method of claim 96, wherein the acid solution is selected from the group consisting of acetic acid, phosphoric acid, formic acid, sulfuric acid, hydrochloric acid, hydrofluoric acid, hydroiodic acid, nitric acid, or hydrobromic acid.

98. (Previously Presented) The method of claim 96, wherein the acid solution has a concentration of between 0.01 % and 100 % acid.

99. (Previously Presented) The method of claim 96, wherein the base solution comprises a base selected from the group consisting of sodium hydroxide, potassium hydroxide, or ammonium hydroxide.

100. (Previously Presented) The method of claim 96, wherein the base solution has a concentration of between 0.01 % and 100 % base.

101. (Previously Presented) The method of claim 90, wherein dentin is generated in response to trauma to the tooth.

102. (Previously Presented) The method of claim 101, wherein the trauma is a root canal.

103. (New) The isolated human postnatal deciduous dental pulp multipotent stem cell of claim 1, wherein the stem cell has a higher proliferation rate than adult dental pulp cells and bone marrow stem cells.

104. (New) The isolated human postnatal deciduous dental pulp multipotent stem cell of claim 1, wherein the postnatal deciduous tooth is an incisor.

105. (New) The isolated human postnatal deciduous dental pulp multipotent stem cell of claim 1, obtained by the process of:

separating pulp from a remnant crown of a human postnatal deciduous tooth;
digesting the pulp in collagenase and dispase to form digested pulp;
producing a single cell suspension from the digested pulp; and
isolating single cells that adhere to a tissue culture surface from the single cells suspension.

106. (New) The isolated human postnatal deciduous dental pulp multipotent stem cell of claim 1, wherein the multipotent stem cell generates mineralized tissue following transplantation *in vivo*.

107. (New) The isolated human postnatal deciduous dental pulp multipotent stem cell of claim 1, wherein the cell induces bone formation following transplantation *in vivo*.

108. (New) A method for isolating a human postnatal deciduous dental pulp multipotent stem cell, comprising:

separating pulp from a remnant crown of a human postnatal deciduous tooth;
digesting the pulp in collagenase and dispase to form digested pulp;
producing a single cell suspension from the digested pulp; and

isolating single cells that adhere to a tissue culture surface from the single cells
suspension;
thereby isolating the human postnatal deciduous dental pulp multipotent stem cell of
claim 1.